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EXAMINER

CHAI, LONGBIT

ART UNIT PAPER NUMBER

2131

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/727,513

Applicant(s)

LEE, SANG-JIN

Examiner

Longbit Chai

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1 – 21 have been presented for examination. Claim 1 has been amended and new claims 16 – 21 have been added in an amendment filed 9/23/2004. Claims 1 – 21 have been examined.

Response to Arguments

2. Applicant's arguments with respect to the subject matter of the instant claims 1 – 15 have been fully considered but are not persuasive. The claims 18 and 19 have new ground(s) of rejection as presented as the new claim in the amendment.

3. As per claim 11, Applicant remarks, in Lay, "does not teach anything about an instruction pointer of a CPU, or anything about pointing the instruction pointer to a boot image in main memory (of a specific region)". However, Examiner notes that this feature is deemed to be inherent; otherwise, the boot image can never be successfully executed at the specific region to perform the operating system control function when booting the computer. Because the missing descriptive matter is necessarily present to cause the system to function and because persons of ordinary skill in the art would recognize this necessary presence, the inherency of this missing feature is sufficiently established. See MPEP §2112 and *In re Roberston*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

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4. As per claim 14 and 15, Applicant remarks "It is in this boot image memory or CD ROM that the image is compressed. When the image is read out, it is decompressed. The decompressed boot image is stored in main memory (or RAM)". In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., It is in this boot image memory or CD ROM that the image is compressed. When the image is read out, it is decompressed. The decompressed boot image is stored in main memory (or RAM) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. As per claim 1 and 7, Examiner notes that Lay's background section can also be considered as part of Lay's disclosure and Lay is relied upon (a) reading out a boot image from the boot image storing device and storing (loading) into the main memory upon the power failure (Lay: see for example, Column 3 Line 2 – 5) (b) providing a teach to boot the computer directly from the main memory can indeed decrease / speedup the boot time so that the boot image doesn't need to be transferred from the boot image storing device to the main memory (Lay: see for example, Column 1 Line 55 – 58), and (c) addressing the need for a RAM (or main memory) that stores a boot image with a power backup capability because Lay identifies the problem that when attempting to decrease the boot time by saving a boot image in the RAM (or main memory), the image would be lost once

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the system is powered down (Lay: see for example, Column 1 Line 53 – 58). The Examiner further notes that Oka is relied upon providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24). As a result, the combination of Lay and Oka teaches (a) reading the boot image from the boot image device, (b) storing (or loading) the boot image into the main memory and (c) supplying (or switching) the backup battery power upon system power downs to decrease and speedup the boot time. Furthermore, Applicant also asserts “the same memory with the battery backup is the same memory for execution of the boot image”. The Examiner further notes this feature is not recited in the rejected claim limitation as well as “specifically” what the same memory exactly means. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

6. As per claim 7, Applicant remarks “Oka does not provide a teaching of determining whether the computer is powered down”. Examiner notes (a) Oka discloses supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24) and (b) the feature “determining whether the computer is powered down” is deemed to be inherent so that the backup battery can switch-in upon power failures. Because the missing descriptive matter is necessarily present to cause the system to function as it should be and because persons of

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ordinary skill in the art would recognize this necessary presence, the inherency of this missing feature is sufficiently established. See MPEP §2112 and *In re*

Roberston, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 11 – 15 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Lay (Patent Number: 6098158), hereinafter referred to as Lay.

As per claim 11, Lay teaches a method for booting a computer, comprising the steps of:

providing a central processing unit (CPU) having an instruction pointer and a memory for storing a boot image and a main memory; reading out said boot image; loading said boot image into said main memory (Lay: see for example, Figure 1, Column 1 Line 18 – 21 & Column 4 Line 1 – 40);

setting said instruction pointer of said CPU to point to said boot image in main memory; and executing an operating system by reading out said boot image from main memory (Lay: see for example, Column 1 Line 21 – 23: pointing the instruction pointer to a boot image in main memory is deemed to be inherent so that the boot image can be successfully executed at the specific region to perform the operating system control function when booting the computer).

As per claim 12, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said memory for storing said boot image prior to reading out said boot image being a boot image memory (Lay: see for example, Column 1 Line 61 – 62).

As per claim 13, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said memory for storing said boot image prior to reading out said boot image being a compact disk read only memory (CD-ROM) (Lay: see for example, Column 6 Line 33).

As per claim 14, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches said boot image is accomplished when said boot image is in a compressed format (Lay: see for example, Column 1 Line 53).

As per claim 15, Lay teaches the claimed invention as described above (see claim 14). Lay further teaches decompressing said boot image after said compressed boot image is read out (Lay: see for example, Column 6 Line 53: The compressed boot image must be decompressed before the execution after read out – i.e., the decompression is considered as the inherited feature of compression technique).

As per claim 21, Lay teaches the claimed invention as described above (see claim 11). Lay further teaches executing step occurring without having to transfer said boot image from said main memory to another location (Lay: see for example, Column 1 Line 22 – 23: Examiner notes “another location” is interpreted as any other location than the main memory to meet the claim language – although the claim is interpreted in light of the specification, limitations from the specification are not read into the claim. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A person shall be entitled to a patent unless --

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 – 10 and 16 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lay (Patent Number: 6098158), hereinafter referred to as Lay, in view of Oka (Patent Number: 5448741), hereinafter referred to as Oka.

As per claim 1, Lay teaches a computer, comprising:

a central processing unit ((Lay: see for example, Column 1 Line 27 – 28 and Figure 2);

Lay does not teach a main and/or auxiliary power supply for supplying main and/or auxiliary power of the computer.

Oka teaches:

a main and/or auxiliary power supply for supplying main and/or auxiliary power of the computer (Oka: see for example, Column 3 Line 23 – 27 and Figure 1 Element 29 and 31);

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Oka within the system of Lay because (a) Lay identifies the problem that when attempting to decrease the boot time by saving a boot image in the RAM (or main memory), the image would be lost once the system is powered down (Lay: see for example, Column 1 Line 53 – 58) and (b) Oka teaches providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24).

For further introductory information, most importantly, Lay discloses the method to reduce the boot time by saving and booting the image from the computer's physical memory (e.g., RAM) (Lay: see for example, Column 1 Line 53 – 58). However, Lay also discloses the issue of this approach is that the boot image is lost once the system is powered down (Lay: see for example, Column 1 Line 56 – 58). The most obvious solution is evidently using a backup power supply to prevent the data stored in the RAM from vanishing even if the power switch of the computer is turned off as taught by Oka (Oka: see for example, Column 3 Line 23 – 27).

As a result, the modification would have been obvious, as taught by Lay, because one of ordinary skill in the art would have been motivated to load (or store) the boot image into the main memory before the powered down to reduce booting time (instead of restoring the boot image from the system disk at power-on) considering the performance as the preferred option (i.e. reducing booting time) regardless the higher cost of hardware modifications to support the backup power supply system.

a boot image storing device for storing a boot image of the computer (Oka: see for example, Column 3 Line 21 – 22);

Lay as modified further teaches:

a main memory for storing the boot image from the boot image storing device by receiving the auxiliary power when the main power is shut off (Oka: see for example, Column 3 Line 19 – 24).

a composition memory for setting an instruction pointer of the central processing unit to a specific region of the main memory storing the boot image, wherein the central processing unit loads the boot image from the specific region of the main memory in response to the instruction pointer, allowing an operating system program to perform control functions (Oka: see for example, Column 3 Line 1, Column 3 Line 19 – 22, Column 3 Line 24 and Column 5 Line 20 – 22: pointing the instruction pointer to a boot image in main memory is deemed to be inherent so that the boot image can be successfully loaded / executed at the specific region to perform the operating system control function when booting the computer).

As per claim 7, Lay teaches a method for powering down a computer receiving main and auxiliary power, the method comprising the steps of:

providing a central processing unit, a main memory, a basic input/output system memory and a boot image storing device (Lay: see for example, Column 1 Line 27 – 28 and Figure 2: These components are inherited from a computer system running OS/2);

Lay does not teach determining whether the computer is powered down.

Oka teaches determining whether the computer is powered down (Oka: see for example, Column 3 Line 10 – 12, Column 3 Line 23 – 27 and Column 4 Line 13 – 18 & Figure 1 Element 29 and 31: This feature is inherited from the backup power supply so that the backup battery can switch-in upon power failures).

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It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Oka within the system of Lay because (a) Lay identifies the problem that when attempting to decrease the boot time by saving a boot image in the RAM (or main memory), the image would be lost once the system is powered down (Lay: see for example, Column 1 Line 53 – 58) and (b) Oka teaches providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24).

Lay as modified further teaches:

reading out a boot image from the boot image device; and storing the read boot image to the main memory; supplying the auxiliary power to the main memory; and shutting off the main power (Lay: see for example, Column 3 Line 2 – 5, Column 1 Line 55 – 58) & (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24: Lay teaches (a) reading out a boot image from the boot image storing device and storing (loading) into the main memory upon the power failure (Lay: see for example, Column 3 Line 2 – 5 and Column 1 Line 61 – 65) (b) providing a teach to boot the computer directly from the main memory can indeed decrease / speedup the boot time so that the boot image doesn't need to be transferred from the boot image storing device to the main memory (Lay: see for example, Column 1 Line 55 – 58), and (c) addressing the need for a RAM (or main memory) that stores a boot image with a power backup capability because Lay identifies the problem that when attempting to decrease the boot time by saving a

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boot image in the RAM (or main memory), the image would be lost once the system is powered down (Lay: see for example, Column 1 Line 53 – 58). Besides, Oka teaches providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24). As a result, the combination of Lay and Oka teaches (a) reading the boot image from the boot image device, (b) storing (or loading) the boot image into the main memory and (c) supplying (or switching) the backup battery power upon system power downs to decrease and speedup the boot time).

As per claim 10, Lay teaches a method for powering on a computer receiving main and auxiliary power, the method comprising the steps of:

providing a central processing unit with an instruction pointer,

Lay does not teach a main memory storing a boot image by receiving the auxiliary power when the main power is shut off, and a basic input/output system memory setting the instruction pointer.

Oka teaches:

a main memory storing a boot image by receiving the auxiliary power when the main power is shut off and a basic input/output system memory setting the instruction pointer (Oka: see for example, Column 3 Line 19 – 25, Column 2 Line 68 and Column 3 Line 1);

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Oka within the system of Lay because (a) Lay identifies the problem that when attempting to decrease the boot time by saving a boot image in the RAM (or main memory), the image would be lost once the system is powered down (Lay: see for example, Column 1 Line 53 – 58) and (b) Oka teaches providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24).

Lay as modified further teaches:

checking initializing steps and faults of the hardware components of the computer (Oka: see for example, Column 6 Line 60 – 61);

setting the instruction pointer of the central processing unit to a boot image storing region of the main memory; and executing an operating system program by reading out the boot image from the boot image storing region of the main memory (Oka: see for example, Column 3 Line 1, Column 3 Line 19 – 22, Column 3 Line 24 and Column 5 Line 20 – 22: the feature of pointing the instruction pointer to a boot image in main memory is deemed to be inherent (i.e. as it is the way it is supposed to work for the boot process in the field) because the CPU instruction pointer must be pointed to the boot image in main memory (of a specific region); otherwise, the boot code can never get executed and an operating system program can never perform control functions).

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As per claim 2, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified further teaches the auxiliary power supply is composed of alternative one of a battery and a suspend voltage supplying unit of the main power supply (Oka: see for example, Column 3 Line 10 – 12, Column 4 Line 13 – 18 and Figure 1 Element 29 and 31).

As per claim 3, Lay as modified further teaches the claimed invention as described above (see claim 1). Lay as modified further teaches the boot image storing device is a hard disk drive (Oka: see for example, Column 3 Line 21 – 22).

As per claim 4, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified teaches the boot image storing device is a non-volatile memory device (Lay: see for example, Column 1 Line 61 – 62).

As per claim 5, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified teaches the boot image storing device is a compact disk drive (Lay: see for example, Column 1 Line 33).

As per claim 6, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified further teaches said composition memory is a BIOS ROM (Basic Input Output System Read Only Memory) (Oka: see for example, Column 3 Line 1 and Figure 1 Element 12).

As per claim 8, Lay as modified teaches the claimed invention as described above (see claim 7). Lay as modified further teaches reading out a boot image from the boot image storing device is accomplished according to an initial state of the main memory (Lay: see for example, Column 3 Line 2 – 5: Lay teaches it can be accomplished according to any given state of the memory. This covers the initial state of the main memory).

As per claim 9, Lay as modified teaches the claimed invention as described above (see claim 7). Lay as modified further teaches reading out a boot image from the boot image storing device is accomplished when the computer is powered down (Lay: see for example, Column 1 Line 63 – 64).

As per claim 16, Lay as modified teaches the claimed invention as described above (see claim 7). Lay as modified further teaches the boot image being executed to boot said computer while said boot image resides in said main memory (Lay: see for example, Column 1 Line 55 – 58: Lay teaches booting the computer directly from the main memory can indeed decrease / speedup the boot time so that the boot image doesn't need to be transferred from the boot image storing device to the main memory).

As per claim 17, Lay as modified teaches the claimed invention as described above (see claim 7). Lay as modified further teaches said computer being booted without having to read said boot image out of said main memory (Lay: see for example, Column 1 Line 55 – 58: Lay teaches booting the computer directly from the main memory can indeed decrease / speedup the boot time so that the boot image doesn't need to be transferred from the boot image storing device to the main memory).

As per claim 18, Lay as modified teaches the claimed invention as described above (see claim 7). Lay as modified further teaches said reading, said storing and said supplying steps occurring upon said determination that said computer is being powered down (Lay: see for example, Column 3 Line 2 – 5 and Column 1 Line 55 – 58) & (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24: Lay teaches (a) reading out a boot image from the boot image storing device and storing (loading) into the main memory upon the power failure (Lay: see for example, Column 3 Line 2 – 5) (b) providing a teach to boot the computer directly from the main memory can indeed decrease / speedup the boot time so that the boot image doesn't need to be transferred from the boot image storing device to the main memory (Lay: see for example, Column 1 Line 55 – 58), and (c) addressing the need for a RAM (or main memory) that stores a boot image with a power backup capability because Lay identifies the problem that when attempting to decrease the boot time by saving a boot image in the RAM (or main

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memory), the image would be lost once the system is powered down (Lay: see for example, Column 1 Line 53 – 58). Besides, Oka teaches providing a solution by supplying the backup power to the RAM (or main memory) after the boot image is loaded in to the RAM (Oka: see for example, Column 3 Line 19 – 22 and Column 3 Line 24). As a result, the combination of Lay and Oka teaches (a) reading the boot image from the boot image device, (b) storing (or loading) the boot image into the main memory and (c) supplying (or switching) the backup battery power upon system power downs to decrease and speedup the boot time).

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lay (Patent Number: 6098158), hereinafter referred to as Lay, in view of Gharda (Patent Number: 6009520), hereinafter referred to as Gharda.

As per claim 20, Lay teaches the claimed invention as described above (see claim 11). Lay does not disclose explicitly decompressing said boot image after said reading step and before said loading step.

Gharda teaches decompressing said boot image after said reading step and before said loading step (Gharda: see for example, Column 6 Line 16 – 21).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Gharda within the system of Lay because Gharda teaches an improved method to speedup the boot process in

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much higher speeds by compressing the BIOS in a ROM chip and decompressing in the main memory RAM (Gharda: see for example, Column 1 Line 36 – 42).

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lay (Patent Number: 6098158), hereinafter referred to as Lay, in view of Oka (Patent Number: 5448741), hereinafter referred to as Oka, and in view of Gharda (Patent Number: 6009520), hereinafter referred to as Gharda.

As per claim 19, Lay as modified teaches the claimed invention as described above (see claim 1). Lay as modified does not disclose explicitly said boot image being stored in said main memory in decompressed format.

Gharda teaches said boot image being stored in said main memory in decompressed format (Gharda: see for example, Column 6 Line 16 – 21).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teaching of Gharda within the system of Lay as modified because Gharda teaches an improved method to speedup the boot process in much higher speeds by compressing the BIOS in a ROM chip and decompressing in the main memory RAM (Gharda: see for example, Column 1 Line 36 – 42).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Longbit Chai whose telephone number is 571-272-3788. The examiner can normally be reached on Monday-Friday 8:00am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz R Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3788.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Longbit Chai
Examiner
Art Unit 2131

LBC


EMMANUEL L. MOISE
PRIMARY EXAMINER